

## PATENT COOPERATION TREATY

PCT/JP2004/001845



**Translation**

## PCT

 INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
 (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03R01073	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2004/001845	International filing date (day/month/year) 18 February 2004 (18.02.2004)	Priority date (day/month/year) 14 March 2003 (14.03.2003)	
International Patent Classification (IPC) or national classification and IPC G02F 1/1335, 1/19			
Applicant SHARP KABUSHIKI KAISHA			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2. This REPORT consists of a total of <u>8</u> sheets, including this cover sheet.	
3. This report is also accompanied by ANNEXES, comprising:	
a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:	
<input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).	
<input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.	
b. <input type="checkbox"/> (sent to the International Bureau only) a total of _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4. This report contains indications relating to the following items:	
<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input checked="" type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input checked="" type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand 14 June 2004 (14.06.2004)	Date of completion of this report 26 April 2005 (26.04.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/001845

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ The international application as originally filed/furnished
- ☐ the description:  
pages \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) -- see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP04/001845

## Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 14-15

because:

- ☐ the said international application, or the said claims Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*):

- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 14-15  
are so unclear that no meaningful opinion could be formed (*specify*):

No mention is made about concrete examples of a second material which discharges or absorbs a specific element when light is radiated and a material having a photocatalytic efficiency. Some materials are unable to change a light reflective state to/from a light transmissive state for the light radiated from an illuminator to the second layer.

In view of such insufficient endorsement, it is not possible to offer a meaningful opinion.

- ☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for said claims Nos. 14-15.
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
- |                            |  |
|----------------------------|--|
| the written form           | <input type="checkbox"/> has not been furnished            |
|                            | <input type="checkbox"/> does not comply with the standard |
| the computer readable form | <input type="checkbox"/> has not been furnished            |
|                            | <input type="checkbox"/> does not comply with the standard |
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ see Supplemental Box for further details.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP04/001845

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-13, 16-48	YES
	Claims		NO
Inventive step (IS)	Claims	5, 22-40, 48	YES
	Claims	1-4, 6-13, 16-21, 41-47	NO
Industrial applicability (IA)	Claims	1-13, 16-48	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

Document 1: JP, 62-71930, A (Canon, Inc.), 2 April, 1987 (02.04.87), full text, all drawings

Document 2: JP, 2000-347184, A (Minolta Co., Ltd.), 15 December, 2000 (15.12.00), full text, all drawings

Document 3: JP, 2000-56294, A (Seiko Epson Corp.), 25 February, 2000 (25.02.00), full text, all drawings

Document 4: WO, 00-63745, A (Koninklijke Philips Electronics N.V.), 26 October, 2000 (26.10.00), full text, all drawings, & US, 6437900, B1, & JP, 2002-542513, A

Document 5: EP, 1085365, A (Agilent Technologies Inc.), 21 March, 2001 (21.03.01), full text, all drawings, & US, 6317531, B1, & JP, 2001-117124, A

Document 6: JP, 2002-345149, A (Kabushiki Kaisha Enetto), 29 November, 2002 (29.11.02), full text, all drawings

Document 7: WO, 98-08139, A (Philips Electronics N.V.), 26 February, 1998 (26.02.98), full text, all drawings

Document 8: EP, 1081538, A (Agilent Technologies Inc.), 7 March, 2001 (07.03.01), full text, all drawings, & US, 6259853, B1, & JP, 2001-133817, A

Document 9: WO, 98-10329, A (Philips Electronics N.V.), 12 March, 1998 (12.03.98), full text, all drawings, & US, 5905590, A, & JP, 11-514759, A

Document 10: JP, 2000-321564, A (Sharp Corp.), 24 November, 2000 (24.11.00), full text, all drawings

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.  
Continuation of: V

**Claim 1**

The subject matter of claim 1 does not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR.

Document 1 discloses a display system with a dimming element and a display element wherein the dimming element has a plurality of regions, each of which is capable of displaying by independently changing a light reflective state to/from a light transmissive state.

Document 2 discloses a display system in which the light reflective state and the light transmissive state of a plurality of regions change in accordance with the types of displayed information.

The display systems of documents 1 and 2 belong to technical fields closely related to each other, so a person skilled in the art could have easily arrived at selectively changing the light reflective state to/from the light transmissive state of each of a plurality of regions shown in document 1 in accordance with the types of displayed information as shown in document 2.

**Claims 2 and 3**

The subject matters of claims 2 and 3 do not appear to involve an inventive step in view of documents 1-3 cited in the ISR.

Document 3 discloses a display system that provides display signals of different kinds from each other depending on whether it displays by modulating transmitted light or by modulating reflected light.

The display systems of documents 1-3 belong to technical fields closely related to one another, so a person skilled in the art could have easily arrived at applying the display signals of document 3 to a display system of document 1 or 2.

Dividing a plurality of regions from pixel to pixel in the invention of document 1 is within the ordinary design ability to be exercised by a person skilled in the art as he or she thinks fit.

**Claims 4 and 6-9**

The subject matters of claims 4 and 6-9 do not appear to involve an inventive step in view of documents 1-5 cited in the ISR.

Document 4 discloses a display system with a display element and a dimming element which changes its light reflectance in response to external stimulus, wherein the dimming element contains a first material of which the optical characteristics vary in accordance with the density of a specific element.

Document 5 discloses a dimming element which has a laminated structure containing a first layer and a second layer, the first layer changing the light reflectance thereof in response to external stimulus; wherein the first layer contains a first material of which the optical characteristics change in accordance with the density of a specific element and the second layer contains a second material which may contain the specific element and discharges or absorbs the specific element in response to an external stimulus.

The dimming elements shown in document 1, 4 and 5 belong to technical fields closely related to one another, so a person skilled in the art could have easily arrived at using a dimming element of document 4 or 5 as the dimming element of document 1.

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

**Claims 10-13, 16 and 17**

The subject matters of claims 10-13, 16 and 17 do not appear to involve an inventive step in view of documents 1-6 cited in the ISR.

Document 6 (particularly [0114] and Fig. 16) describes that a PTC characteristic curve having a wide plateau area is preferable.

A person skilled in the art could have easily arrived at the use of a preferable PTC characteristic curve with a wide plateau area as described in document 6 in the dimming element of document 5.

**Claim 18**

The subject matter of claim 18 does not appear to involve an inventive step in view of documents 1-7 cited in the ISR.

Document 7 discloses a dimming element having a first layer which functions as one of two electrically conductive layers.

The dimming elements of documents 4 and 7 belong to technical fields closely related to each other, so a person skilled in the art could have easily conceived of applying the first layer of document 4 as an electrically conductive layer as described in document 7.

**Claims 19 and 20**

The subject matters of claims 19 and 20 do not appear to involve an inventive step in view of documents 1-8 cited in the ISR.

Document 8 (particularly [0016], or JP, 2001-133817, A, [0015]) discloses a dimming element having a second layer which functions as one of two electrically conductive layers.

The dimming elements of documents 4 and 8 belong to technical fields closely related to each other, so a person skilled in the art could have easily conceived of using the second layer of document 4 as an electrically conductive layer as described in document 8.

**Claims 21 and 41-43**

The subject matters of claims 21 and 41-43 do not appear to involve an inventive step in view of documents 1-9 cited in the ISR.

Document 9 (particularly lines 11-14, page 3, or JP, 11-514759, A, lines 14-17, page 6) discloses a dimming element having a multilayer structure.

The dimming elements of documents 4 and 9 belong to technical fields closely related to each other, so a person skilled in the art could have easily conceived of giving the multilayer structure of document 9 to the first or second layer of document 4.

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

## Claims 44-47

The subject matters of claims 44-47 do not appear to involve an inventive step in view of documents 1-10 cited in the ISR.

Document 10 discloses a display system wherein a translucent reflection membrane is provided inside a display element, which contains a first color filter while the translucent reflection membrane contains a second color filter disposed opposite to an observer with respect to the translucent reflection membrane.

The display systems of documents 1, 4 and 10 belong to technical fields closely related to one another, so a person skilled in the art could have easily conceived of providing a dimming element of document 1 or 4 inside a display element and apply the first and second color filters as described in document 10.

## Claims 5, 22-40 and 48

The subject matters of claims 5, 22-40 and 48 appear to involve an inventive step in view of documents 1-10.

None of documents 1-10 discloses a dimming element containing a first material, of which the optical characteristics change in accordance with the density of a specific element, and which is granular, and the feature could not have easily been arrived at by a person skilled in the art.